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Neoclassical economic orthodoxy and the need for a new post-crisis economic paradigm

Andrei JOSAN
The Bucharest University of Economic Studies
andrei_jsn@yahoo.com
Cristina (COVACI) VOICU
The Bucharest University of Economic Studies
cristina.voicu@economie.ase.ro

Abstract. *Capitalism is a social adaptive system that evolve, change and grow in response to the challenges of a rapidly changing economic environment. When capitalism is seriously threatened by a systemic crisis, a new version much better adapted to existing conditions appears. Critical analysis of the fundamental ideas underlying neoclassical economic theory shows that the capitalist system is fundamentally a dynamic and therefore static neoclassical models proved to be unsuitable for studying it. Contrary to neoclassical economic vision, the capitalist economy is not governed by immutable economic laws. Global systemic crisis of capitalism that began in 2007 has highlighted the need for a new economic paradigm on which to be built and to be performed a new version of capitalism, in line with the increasingly complex realities of a globalized and quick changing world.*

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REL Classification: 1A, 2B, 3B.

Introduction

The financial crisis triggered in 2007 revealed that between dominant economic theory and economic reality there is a great discrepancy. Absolute confidence in standard neoclassical theory has led governments to deregulate financial markets, a process triggered in the Anglo-Saxon decades ago under the influence of neo-liberal paradigm. Apparent success of financial markets in the last three decades – despite regional or sectorial crises – has turned into a role model to restructure society as a whole. In addition, under the neoliberal paradigm that remains dominant, global capitalist reform is very difficult, and the creation of a new variant of capitalism based on a new paradigm remains a difficult goal to achieve.

In the Western world, the last 40 years have been marked by a series of major economic policy errors. These errors were, according to Barbera (2009), strategic, not tactical, and this was determined, first, that the economic policies were the product of a flawed economic theory. Therefore, the architects of these theories can be considered at least partially responsible for their contribution to triggering the greatest systemic crisis in the history of capitalism.

Literature review and some history

The global financial crisis has shown in a manner quite clear and tough that the functionalist perspective of the capitalist system, seen as an impersonal machine for creating wealth, seek or remain in a steady state, is erroneous. This view underestimates, as underlined Streek (2009), both anarchism Schumpeterian entrepreneurship and the predator Keynesian spirit. On the other hand, regarded the institutionalist perspective, capitalism is a complex institutional social order, and not a mere combination of private property and free markets. The importance of political institutions to create conditions for capitalism has long emphasized the works of Adam Smith, Max Weber, Joseph Schumpeter, Douglas North and many others. What happened with the onset of the conservative revolution in the 1980s was that the conservative political leaders, the business world and a large part of economists decided to ignore historical facts pleaded in the direction of a more complex approach to economic and social realities in favor of ultra short version ideology promoted by free market fundamentalism. In essence, these free-market fundamentalists believed that markets are always right, and governments acted almost always wrong. This approach represented a radical break with respect to the previous phase of capitalism between 1930 and 1970, when economists started on the assumption that governments were always right and markets always fail.

As with other major crisis, its causes were analyzed and discussed in detail, and one of the main questions was about how so many economists have been unable to predict the 2008 financial collapse and recession that followed. According to Orrell (2010), the failure of economists to predict the crisis was not something unusual. What was unusual, however, was that not only theoretical models were untrue but also contributed to the crisis. And this, because the fundamental ideas underlying economic theory (neoclassical) are wrong. Orrell points out that this means that not only mathematical models are wrong, but economists mental models are completely wrong (Orrell, 2010). From this perspective, the failure of Lehman Brothers on September 15, 2008 was the collapse of the economic system and philosophy that formed the basis thereof. More specifically, the crisis signaled the end of the free market neoliberal model, the extreme version of neoclassical neoliberal orthodoxy. It is more likely that in the medium term after the neoliberal model will cease to be the dominant economic model, to show a new economic paradigm based on which economic growth takes place in the capitalist world.

Age of the free market fundamentalism of the 1980s and 2009 was dominated by neoliberal dogma that government intervention is always harmful to private initiative. The main theme that links almost all negative developments that have converged to the global economic crisis in 2007-2008 system was quasi-religious doctrine of perfect markets and its corollary that the market and efficient governments are in Manichean opposition and are unable coexistence. For neoliberal, ideal political-economic system was and still is laissez-faire capitalism, a highly capitalism system, characterized by a complete separation of the economic from state in a manner similar to the separation of church and state. Beliefs of the neoliberal economists in the supremacy and perfectly functioning markets remained adamant even if a majority of philosophers, sociologists, political scientists and economic historians have realized that it is flawed because any society dominated by pure market game will collapse catastrophically. This is evident in the case of failed states such as Somalia, Congo and Afghanistan, countries where the pursuit of profit at any cost is the main law that guide the whole society and governments are extremely weak and unable to perform its functions. These countries fall into a much greater neoliberal model to the United States or Hong Kong and even to tax havens such as the Cayman Islands.

Solutions to economic theory or reality?

As a method of scientific investigation, the economy is simultaneously a social science, environmental, political, and moral mathematics (Boulding, 1970).

According to Schumpeter (2004), economic theory is a "toolbox" used for multidimensional analysis of economic developments. At the core of neoclassical economic theory are a number of ideas that have a major impact on society and affect the process of decision making at the individual, governmental, business environment and society as a whole. At the core of neoclassical theory are a number of statements that have a status of axioms:
1. Economy can be described by economic laws;
2. Economy is composed of independent individuals;
3. Economy is stable and tends toward equilibrium;
4. Economic risk may be relatively easy managed using statistics;
5. Economy is correct;
6. Growth can continue indefinitely;
7. Growth will make everyone happy;
8. Economic growth is always good.

However, the real economy is very different from economic theory, the result of complex processes that are very difficult to fit economic models. The economy is not rational or fair, and economic growth is not automatically desirable. Moreover, it is obvious even to laymen in mathematics that something is clearly wrong with the models that are in the center of the global financial system. One of the fundamental weaknesses of the neoclassical theory is that the entire construction is based on intellectual static patterns that are used to decipher a process characterized primarily dynamism. According to Schumpeter (2003) capitalism is not a static set of institutions, but a system that is constantly evolving and reinventing itself through major crisis, the process of “creative destruction”. Schumpeter's analysis of the functioning of the capitalist economy was achieved in a sharp controversy with the neoclassical school, in his view failed in terms of understanding that, fundamentally, capitalism consists in change and cannot be examined, consequently, in statistical terms.

According to Sewell (2008), change is the only constant thing in capitalism. Capitalism is a social system found in an ever-changing, a system that encourages systematic "mess" and that gives rise to unpredictable events. Capitalism, as shown in Schumpeter (2003), is by nature a form or method of economic change that has not been and cannot be stationary. This dynamic state, evolving capitalist process exists not only because that economic life takes place in a constantly changing environment and modifying economic action data or quasi-automatic increase in population and capital. First, the momentum of the engine that powers the capitalist economy is generated by innovation, technological progress, new

methods of production and transport, new consumer products, new markets and new forms of industrial organization created by the capitalist system.

The entire evolution of capitalism shows that long-term economic growth is the rule, but this increase is not linear but occurs within economic cycles that are characterized by periods of economic boom, followed by seizures and depression/ recession. After that cycle resumes. Cyclical evolution of capitalism highlights the inherent instability of the system and its main sources were identified by Minsky (2008b) in the financial sector because in times of economic prosperity, when the level of employment is high and maintained for longer businessmen and bankers tend to take higher doses of indebtedness. Also, during periods of economic expansion, financial institutions, in an attempt to maximize profits, invents and reinvents new types of financial instruments and techniques, and this guarantee, in Minsky's vision, financial instability. Minsky saw in what he called financial instability hypothesis (Hypothesis Financial instability) the fact that the persistence of favorable conditions for economic development generates a sense of trust in sustaining this condition benign and, secondly, decision-taking encourages confidence risk in the financial world. In Minsky's view, the economic cycles of boom and depression are inherent in the capitalist economy (Minsky, 2008b).

Free markets operate in the real world differently from how their operation is described in theoretical texts, which offer only a distilled version, schematic, used strictly to illustrate the principles on which markets work in the real world. All too often it is forgotten that real markets are existing theories that explaining the functioning of markets and the recent post-crisis debate has revealed that contemporary neoclassical vision prevails the idea that theoretical models are preeminent and real markets should be a reflection of theoretical models free market as it appears based on neoliberal theories described in efficient markets hypothesis (Efficient Market Hypothesis/EMH) and that of rational expectations (Rational Expectations Hypothesis). According to McCleskey (2010), it is very easy to slip into the ideological trap of trying to make reality conform to the model theory, instead of trying to eliminate discrepancies between theory and economic reality.

According to Keen (2001), neoclassical macroeconomics, the product of neoclassical microeconomics, is a theoretical construction marked by a series of errors, the most important of which is related to obsession on macroeconomic equilibrium models, ignoring the role of credit and debt in a market economy, the refusal to accept the existence of division in terms of economic functions between different social classes, the reduction of risk and uncertainty, not least, by treating the financial sector separately from the rest of the economy.

Keen's perception as to the operation of the capitalist system is that it is a dynamic system, powered by the application, which normally operates far from steady state in which the leverage credit and play the principal role in determining the demand and the relationship between social class both in terms of their economic roles and the changing income distribution trends are cyclical and sometimes secular (Keen, 2001).

The central conventional neoclassical thinking is based on IS-LM model, recently completed the new wave of the theory of rational expectations. Both are essentially static models of economic equilibrium, while DSGE models (Dynamic Stochastic General Equilibrium) are currently only unconvincing attempts of theorization of economic equilibrium in a dynamic manner. All these models are based on a number of conclusions of theories that do not account sufficiently demonstrated, for example, from Sraffa the evidence showing that the marginal theory of income distribution based on marginal productivity does not apply in a world of multi-product or incorrect calculation based on perfect competition model. In other words, as pointed out by Kates (2010), neoclassical economists have built a number of macroeconomic models using a conceptual apparatus that proved through microeconomic analysis unrealistic and inconsistent with the real model of how capitalist economy works. The fact that neoclassical macroeconomic models seemed to comply economic realities revealed by empirical data is more evidence of progress in modern econometric techniques in analyzing complex patterns and not necessarily evidence of relevance to the real economy neoclassical models.

The IS-LM model, standard neoclassical model, is highly instructive. IS-LM model is based on the work of John Hicks that has already been questioned even by the economist in question in his work "IS-LM – An Explanation" (Hicks, 1982). Hicks pointed out that the model in question was not inspired by the "general theory" of Keynes, but the author's previous work, in which Hicks tried to build a theoretical dynamic model of a so-called "savings bread" (Hicks, 1935). The author’s intentions and some of the arguments were very interesting. Hicks noted that theories whose construction assuming a steady state were quite satisfactory in terms of that hypothesis, but were unable to be extended and combined with other assumptions and therefore were inapplicable. Hicks also noted that theories of capital, very fashionable at that time, were based on a number of applicable equations in a stationary state of the economy, but once stationary conditions cease to exist, these equations become inapplicable (Hicks 1935). In an attempt to build a dynamic model, Hicks, unfamiliar with complex mathematical techniques for calculating the economic flows in continuous time,

introduced the temporal dimension in his model by dividing the future into short fractions, each of which will be treated as constant. In the model developed by Hicks, these fractions were equal to one week, every Monday – and only on Mondays – market opened and established salaries and interest rate, then the output is held throughout the week, taking prices down in the first Monday as data, the effect of expectations regarding price changes were reduced to zero. Subsequently, irrespective of its initial argument that the applicable state theory equation involves only static terms, Hicks tried to use this type of dynamic equations in his model. Moreover, Hicks used Walras's law to argue that capital markets can be left out of the model on the basis that if the labor market is in equilibrium and that the bread market is in equilibrium, the capital market must be in equilibrium (Hikcs 1935). Subsequently, Hicks used the same way of thinking to disregard the development of IS-LM model labor market (Keen, 2010).

Neoclassical economic orthodoxy

Neoclassical macroeconomic theory is celebrating the "invisible hand" of Adam Smith. This theory has dominated classical and neoclassical economic thinking not questioned until the impact of the Great Depression in the 1930s, when Keynes realized that economic realities have denied the existence of a self-correcting mechanism of the capitalist economy. Publication of the fundamental work “The General Theory of employment, interest and money” in 1936 sparked an intense debate on issues that are still on the agenda of economists worldwide. First, in terms of Samuelson, Keynes substance heresy was the denial of the existence of "invisible hand" that directs the actions of individual market players to achieve the social optimum. The classical economists before Keynes believed that free markets process information fairly and accurately, and this ensures perfect course obviates the economy and state intervention in the economy. Keynes and his followers have challenged this view and stressed that government intervention is needed, especially in times of economic downturn. While Keynes serious argued and indicated that the capitalist system is far from perfect one in terms of the neoclassical synthesis followers capitalist economy is a system that tends towards equilibrium despite external shocks on relatively minor shocks could be mitigated by means of economic policies. Another major difference between these two schools of thought is that while the Great Depression Keynes considered as a normal result of the operation of a complex capitalist financial system. Neoclassical synthesis followers considered the crisis as a special case, resulting and following an unfortunate convergence of economic shocks and economic policy errors. Keynes believed that fundamental changes are needed at

both theoretical and practical level, while devotees of the neoclassical synthesis, felt on the contrary, the system works as expected, and fine tune it is enough.

Neoclassical economists have provided important support to American neoconservative ideologues starting in the 1980s. Since the merger of the two streams – neoclassical economics and political conservatism – has resulted the contemporary neoliberalism, an separate ideology based on Friedman's monetarist theories and politico-philosophical conception of Hayek. From an economic perspective, neoliberalism promotes the idea that individual welfare can be fastest achieved by promoting private initiative in an institutional framework characterized by protecting property rights, free markets and free trade. Neoliberalism is also remarkable in that it focuses primarily on the need to maintain macroeconomic stability, in the opposite end of the Keynesian ideal of full employment of labor and poverty reduction. The political perspective is that the whole building neoliberal Hayek's critique is based on the state, whose role should be limited to ensuring the safety of citizens, protecting the freedom of trade and property right. Neoliberal ideology calls for a reduction of the role of the state and to create a society governed by free market mechanisms. While the market is traditionally defined as being characterized by the absence of state intervention, historical experience shows that market factor is a phenomenon that occurs naturally, but it must be established and regulated through economic policies. Therefore, as pointed out by Birch and Mykhnenko (2010), neoliberalism is based on a contradictory theory of the state as laissez-faire policies can not be implemented without government interference. In other words, the theory of minimal state is illusory, given the neoliberal policies that increase the interventionist role of the state in different ways even in more explicit forms of state intervention.

Neoliberalism has had various versions and proved to be highly adaptable to the social context in which it was applied. Appeared in a negative economic situation caused by structural crises of the 1970s, neoliberalism is, as pointed out by Dumenil and Levy (2011), a new strategy of the capitalist class in alliance with top managers, particularly those in the financial world, which aimed to strengthen their hegemonic position within the capitalist system and, on the other hand, the strengthening of the US hegemonic position globally. Before the biggest contract that began in 2007, this strategy seemed to work, especially if it is considered in the light of their own objectives: increasing income and wealth of a privileged minority and the establishment of US hegemony globally. The crisis has, however, this strategy unsustainable and marked the neoliberalism in deep crisis (Dumenil, Levy, 2011). In reality, as Harvey (2010) remarked, neoliberalism is a

project of economic and political elites, masked abundant rhetoric about individual liberty, individual responsibility, about the virtues of privatization, free markets and free trade. What is important to note that this project is legitimized draconian policies of economic austerity, highly prevalent in the early years of the crisis, policies aimed primarily actually restoring or strengthening power of capital owners. Therefore, in the same way that neoliberalism emerged in response to the crises of the 1970s and now the economic policies adopted in response to the current crisis will define the future evolution of capitalism.

The need for a new post-crisis economic paradigm

Crises are, as noted Harvey (2010), "rationalize irrational of irrational system" (Harvey, 2010, p. 210). Crises are an integral part of the capitalist system. But as pointed out Soros (2008), this time something was different in the sense that if previous crises have successfully tested and misconceptions prevailing trends, the current crisis is a turning point as far as trends and concepts wrong were denied and became untenable. There Soros points out (1998) therefore "an urgent need to rethink and reform the capitalist system and rethinking must start with the recognition that financial markets are inherently unstable. The capitalist system is based on the belief that financial markets tend toward equilibrium alone. It is assumed that they are moving like a pendulum: it could be displaced by external forces, the so-called exogenous shocks, but will seek to return to the equilibrium position. This belief is false. Financial markets are subject to excesses, and when succession occurs boom/crash, beyond a certain point, returning to the starting position is no longer possible. Rather than acting as a pendulum, financial markets have recently acted more like a demolition ball which shattered economy after another" (Soros, 1998, p. 13).

Soros, proposes instead to adopt a new paradigm that is not strictly limited to financial markets, but rather the relationship between theoretical and actual constructions, based on the finding that erroneous conceptions and interpretations have played a major role in determining the course of history. In Soros's view, contemporary dominant economic paradigm is contradicted by the entire financial history shows that periods of economic boom, followed by the economic downturn are exceptions, but the rule in capitalism. According to Soros (2008) paradigm based on the idea that financial markets tend towards equilibrium is false and the source of contemporary economic problems can be attributed to the fact that the entire international financial system was built based on this paradigm. The central idea of the conceptual apparatus developed by Soros is that social

events have a different structure from that of natural phenomena. If natural phenomena, there is always a cause linking a set of facts straight next. In terms of social processes, the course of events is more complicated because not only facts are causal chain, but their interpretation by social actors. There is a two-way connection between facts and opinions prevalent at any point in time: on the one hand, participants seek to understand the situation, which includes both facts and opinions about them, on the other hand, participants seek to influence the situation, a process that again includes both facts and their interpretation. The cognitive and manipulative functions involved in the causal chain where social processes and influences which reflects the opinions of the participants. In other words, since these opinions and interpretations are not accurate, unlike the case of natural phenomena, within social processes there is an element of uncertainty that affects both the actions and opinions of the participants.

According to Soros (1998), free market fundamentalists "have essentially flawed design on the operation of financial markets. They believe that financial markets tend towards equilibrium. Equilibrium theory of economics is based on a false analogy with the physics. Physical objects move according to their own laws, no matter what anyone thinks. Financial markets, however, attempt to predict a future that depends on the decisions that take people today. Instead of passively reflect reality, financial markets actively creating the reality that they in turn reflect. There is a bilateral relation between present decisions and events, which I call reflexivity ... same type feedback mechanism interferes with other activities involving human participants aware. Human beings react to economic forces, social and political conditions in their environment, but, unlike inanimate particles of physics science, human beings have perceptions and attitudes that simultaneously transforms the forces acting on them. This bilateral reflexive interaction between what participants expect and what actually happens is very important for a proper understanding of all economic, political and social ... the concept of reflexivity is relevant for financial markets (and many other economic and social phenomena) than the equilibrium concept underlying conventional economics. Instead of knowledge, market participants start with a certain bias. Reflexivity will act either to correct this bias, where we tend towards equilibrium or initial bias can be enhanced by thoughtful feedback, where markets may depart significantly from equilibrium, without any tendency to return to the point at which they started. Financial markets are characterized by periods of rapid prosperity, but also to collapse and it's amazing that economic theory is based, I'm still on the concept of balance, which denies the possibility of these phenomena, in contradiction with reality. The potential for imbalance is inherent in the financial system, it is not only the result of external shocks." (Soros, 1998, pp.18-19).

What Soros wants to emphasize is the importance of reflexivity as a feedback mechanism between thought and reality, in analyzing social and economic problems, especially in a time when the dominant paradigm based on economic equilibrium theory and its derivative political free market fundamentalism, proved unable to explain how it came to the biggest crisis of the system of capitalist development.

Current global economic crisis is still a new phase in the dynamic evolution of capitalism. Traumatic events of 2007-2008 were, as emphasized Kaletsky (2010), the catalyst of the fourth fundamental transformation of capitalism over the past 200 years, comparable to the transformation triggered by the crises of the 1970s, the Great Depression of 1929-1939 and the Napoleonic wars between 1803 and 1815. The first of these was a major transition period of economic and social momentum that began with political revolutions in America and France and the Industrial Revolution in England, which was created after the first era of modern capitalism. This was long, the relative systemic stability and growing prosperity ended with World War I, the Bolshevik Revolution in Russia and finally triggered the Great Depression of the 1930s in the United States. These events have destroyed capitalism catastrophic classic laissez-faire and created a different version of the capitalist system, inspired by Keynesian economics and adopted successively by the Roosevelt society draft (New Deal), by the Great Society draft announced by Lyndon Johnson and welfare states of Western Europe in the postwar period. Subsequently, the overall inflation in the late 1960s and the 1970s inspired free market revolution promoted by Thatcher and Reagan revolution led to the creation of the three versions of capitalism very different from previous ones. Revolution tandem Thatcher-Reagan conservative in the early 1980s has been described as being neither more nor less than a rediscovery of capitalism "true" after a long period dominated by heresies and deviations crypto-socialist Keynesianism. Then in 2007-2009 the global economy was hit by another systemic crisis that marks the beginning of the process of creating four versions of the capitalist system, a new kind of economy different from previous ones. According to Kaletsky (2010), this version is the so-called capitalism 4.0.

To be able to provide useful analysis, on which it can be made effective economic policies, the new economic thinking must satisfy at least three conditions. First, you have to recognize that the market economy is not a static system at equilibrium or tending toward equilibrium, but a constantly evolving system. Moreover, its ability to adapt in response to changing social, political and technology is the most important feature of the capitalist system. Second, economists will have to accept the key idea that efficient governments and

dynamic private enterprises are in a symbiotic relationship, not in a mutually-exclusive one. In other words, for the proper functioning of the capitalist system is needed so strong governments and strong markets, while the dream of creating a market system by reducing the state's role in the economy extreme end with the global financial crisis 2007. Third, the new post-crisis economic thinking will have to start from the unpredictability of human behavior and economic events.

The unforeseeable essential role played by human behavior was emphasized by Keynes, Schumpeter and Frank Knight and the idea of unpredictability will have to stay in the center of future models that will compete for intellectual supremacy in the next phase of economic thought. In the new economy that is born in the post-crisis period, all players will have to recognize that markets and governments are likely to fail. In a world where the future is increasingly uncertain and depends to an extent becoming more reflexive interactions between human behavior, expectations and reality. The concept of a single model, the only correct in describing the operation of the economy, an idea assumed rational expectations theory is misleading and dangerous illusion. In an uncertain world, decisions at both the economic and institutional, will be taken through a process of trial/error type, and government policies, market behavior and business expectations continually evolve simultaneously with continuous attempts of economic system capitalist adaptation to changing conditions created by their own behavior. As a conclusion of all mentioned above, the future economy will be a mixed explicit in the sense that both public and private sector will play an important role. It will also be an adaptive economy, meaning that the rules of the economic game conduct and relations between governments and markets will be in constant change.

Intellectual and ideological foundations of the new phase of development of capitalism will probably be built on an interdisciplinary theoretical merger through the use of concepts, methods and techniques from related economic sciences, such as psychology, sociology, chaos theory, engineering and psychiatry. A number of theoretical results based on research conducted in the shadow of formal neoclassical paradigm in the 1980s have been reinterpreted and revalued as a result of the current crisis, the most obvious example being that of behavioral economics that has gained visibility in the post-crisis period. Popularized by Robert Schiller, behavioral economics, consider a world in which investors and businessmen are motivated by crowd psychology and not obsessive calculation as if the theory of rational expectations. Behavioral economics is but the most radical approach while not question the fundamental ideas underlying the neoclassical paradigm and therefore they can be prevented by improving the game

more complete markets by disseminating information and by strengthening regulation to prevent fraud and excesses. Behavioral economics has found a widespread audience in the academic world, especially in the Anglo-Saxon world, because of the compatibility with the neoclassical paradigm based on rational expectations hypothesis (REH/Rational Expectations Hypothesis). The results were highlighted through the Nobel Prize awarding an important number of economists who have embraced this theory, such as the work of Herbert Simon to the limits of rationality (bounded rationality), Vernon Smith for game theory (game theory), Daniel Kahneman experimental economy (experimental economics) and George Akerloff, Joseph Stiglitz and Michael Spence for research on asymmetric information (asymmetrical information).

A much greater challenge to the neoclassical theory has come from the direction of mathematical research in the field of chaos theory suggests that much of the mathematical techniques used by standard economic theory pre-crisis are flawed. For example, mathematical research in complex nonlinear systems applied in studying the behavior of economies and markets undertaken by Brian Arthur, challenges a number of standard economic assumptions. Although the findings of research in the field of chaos theory have produced impressive results by applying them to the field of industrial organizations, they were not integrated of macroeconomic policies study and financial markets, precisely the areas in which economic theory has proven the most obvious limits.

Another example is the discovery of Benoit Mandelbrot, one of the most creative mathematicians of the twentieth century, whose mathematical ideas have been applied in studying the effect of the 1960 earthquake, weather forecasting, the study of galaxies and biological systems. Mandelbrot (2004) described in his book “The (miss)behavior of Markets”, as research results from the past 40 years in the field of fractal geometry were ignored by standard economy though seem to provide a much better analysis of market behavior in extreme conditions to standard methods. Even if the results of research in the field of fractal geometry and nonlinear modeling has been successfully applied in the study of earthquakes, weather, evolution, ecology and other complex systems, they were not accepted by economists because in their view the standard mathematical methods gives only approximate results unlike deemed accurate results provided by Gaussian statistics and the efficient market hypothesis (Efficient Market Hypothesis/EMH). The economists under the same standard does not seem to be bothered by the fact that the alleged exact results have nothing to do with reality (Mandelbrot, Hudson, 2004).

Another example that illustrates the cognitive dissonance on the use of mathematical techniques by neoclassical economists is the research conducted by Roman Frydman and Michael Goldberg towards imperfect knowledge based economy (Imperfect Knowledge Economics)/IKE). This approach questions the most important (and least plausible hypothesis) theory of rational expectations, namely the idea that there is one model that accurately describes the functioning of the economy. IKE is based on Keynes and Hayek claims that the economy is too complex to be sure whether a model describes better the economic realities than alternative models alone future ones. Under this approach, due to uncertainty, investors and business people will work on a variety of rational economic assumptions that will change as both the events and their perception evolves. IKE underlying idea is that it would be economically irrational for participants in the game to behave as representative agent model of rational expectations theory, relying only on a single model, given that it is generally impossible to predict the future and much less even knowing the future. The starting point of the theory IKE consists of ideas of Edmund Phelps, one of the Nobel laureates who rejected the hypothesis of a single universal model recognizable and fairly, IKE uses conventional mathematical apparatus of neoclassical theory to generate but radically different results. Because the future is inherently unknowable. IKE assumes that there will always be a multitude of plausible models that describe the functioning of the capitalist system. Another important idea is that economists IKE theory starting from assumptions that take into account a reasonable measure of uncertainty are more able to provide a close analysis of the actual course of economic events to those that rely on the theory of rational expectations. An important role is played by the IKE concept introduced by George Soros reflexivity. This leads to a world where market participants who have different views on the actual conditions of the economy and economic laws, can alter reality through feedback mechanism of reflexivity.

These are just some of the alternative approaches that can help reform the neoclassical paradigm in the post-crisis period while will be recognized the inherent limitations of market forces and economic knowledge. Reforming economics is required, the alternative being, as Kaletsky suggested (2010), its disappearance as a tool of valid, credible economic policies and consistent with economic realities.

Conclusion

Hence, a balanced conclusion of all mentioned above is that to be able to provide useful analysis, on which it can be made effective economic policies, the new economic thinking must respond to specific problems with adequate instruments. In one hand we can not accept the idea of using static models for dynamic conjecture as we have in economic science. We have to admit that the market economy is not a static system at equilibrium or tending toward equilibrium, but a constantly evolving system. Second, economists will have to accept the key idea that efficient governments and dynamic private enterprises are in a symbiotic relationship, not in a mutually-exclusive one. In other words, for the proper functioning of the capitalist system is needed both strong governments and strong markets. In the end of this we'll have to reestablish the importance of considering the unpredictability of human behavior and economic events. We can no longer pretend that using only mathematical instrument we can define and predict human behavior. Economics is more than that.

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